

Figure 1 (Prior Art)

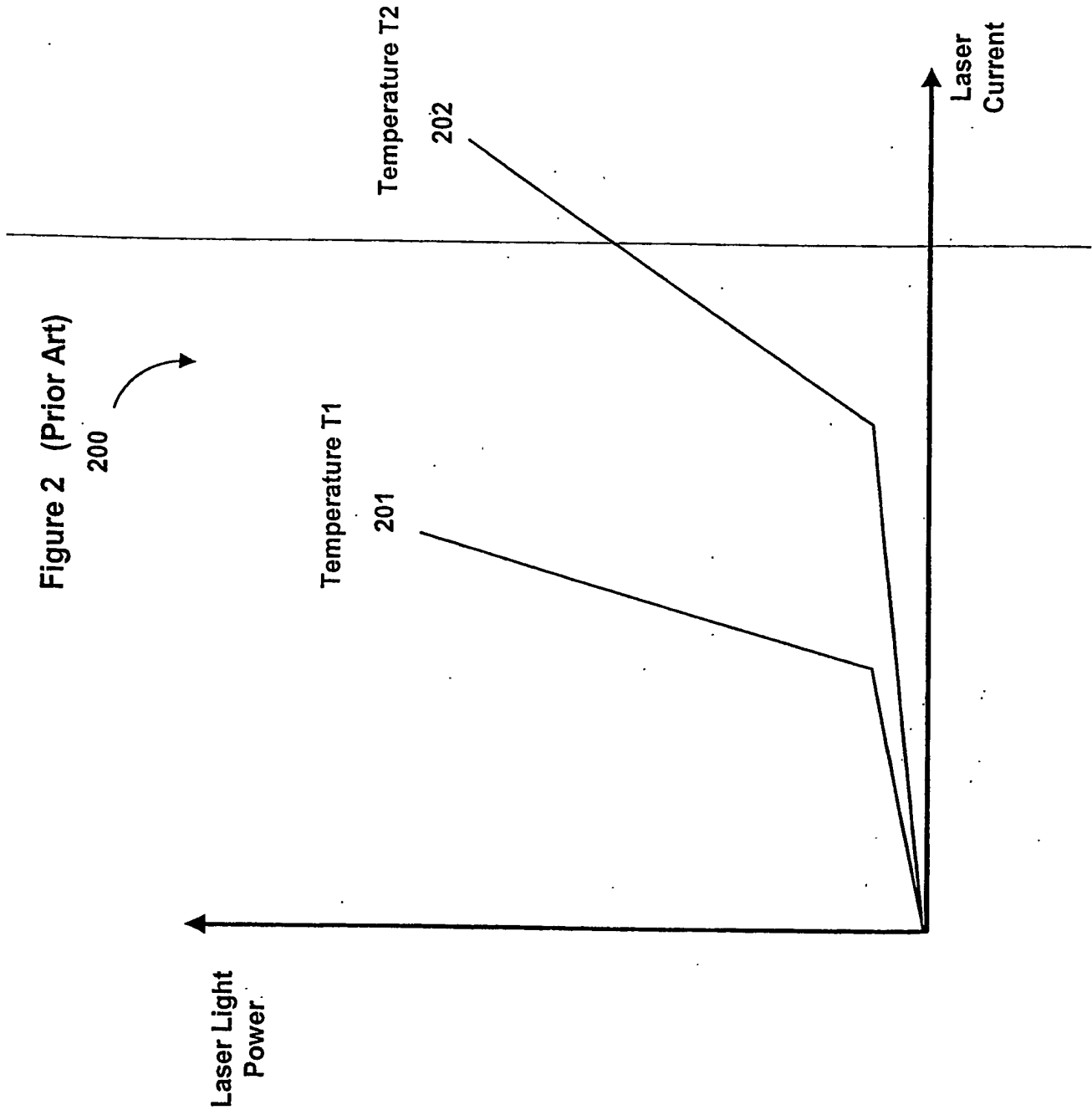


Figure 3 (Prior Art)

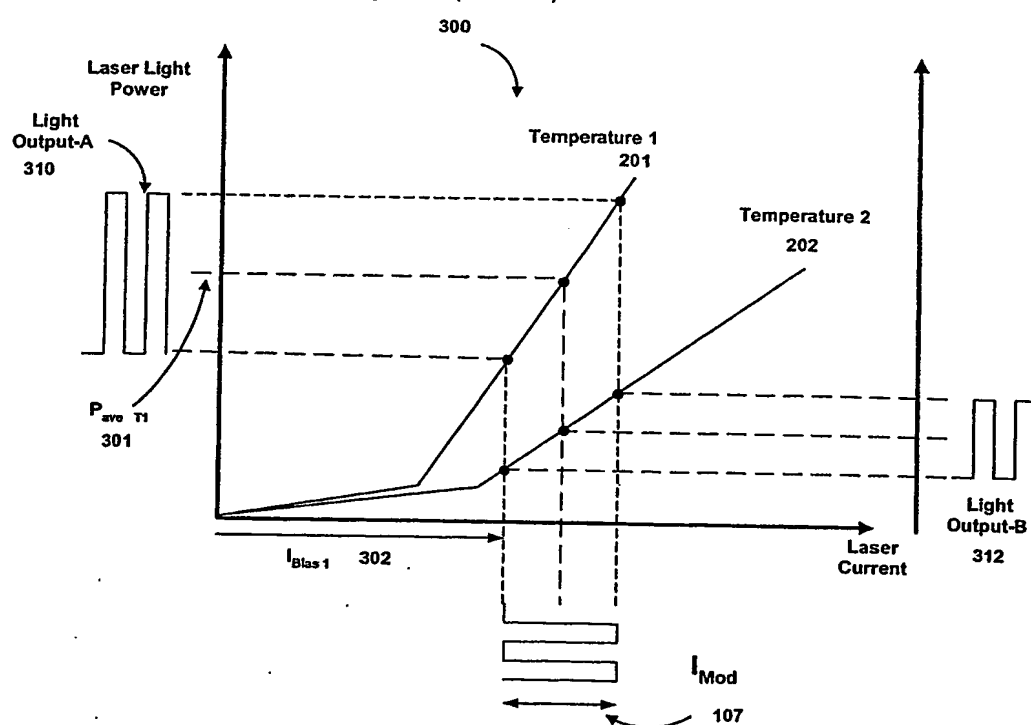
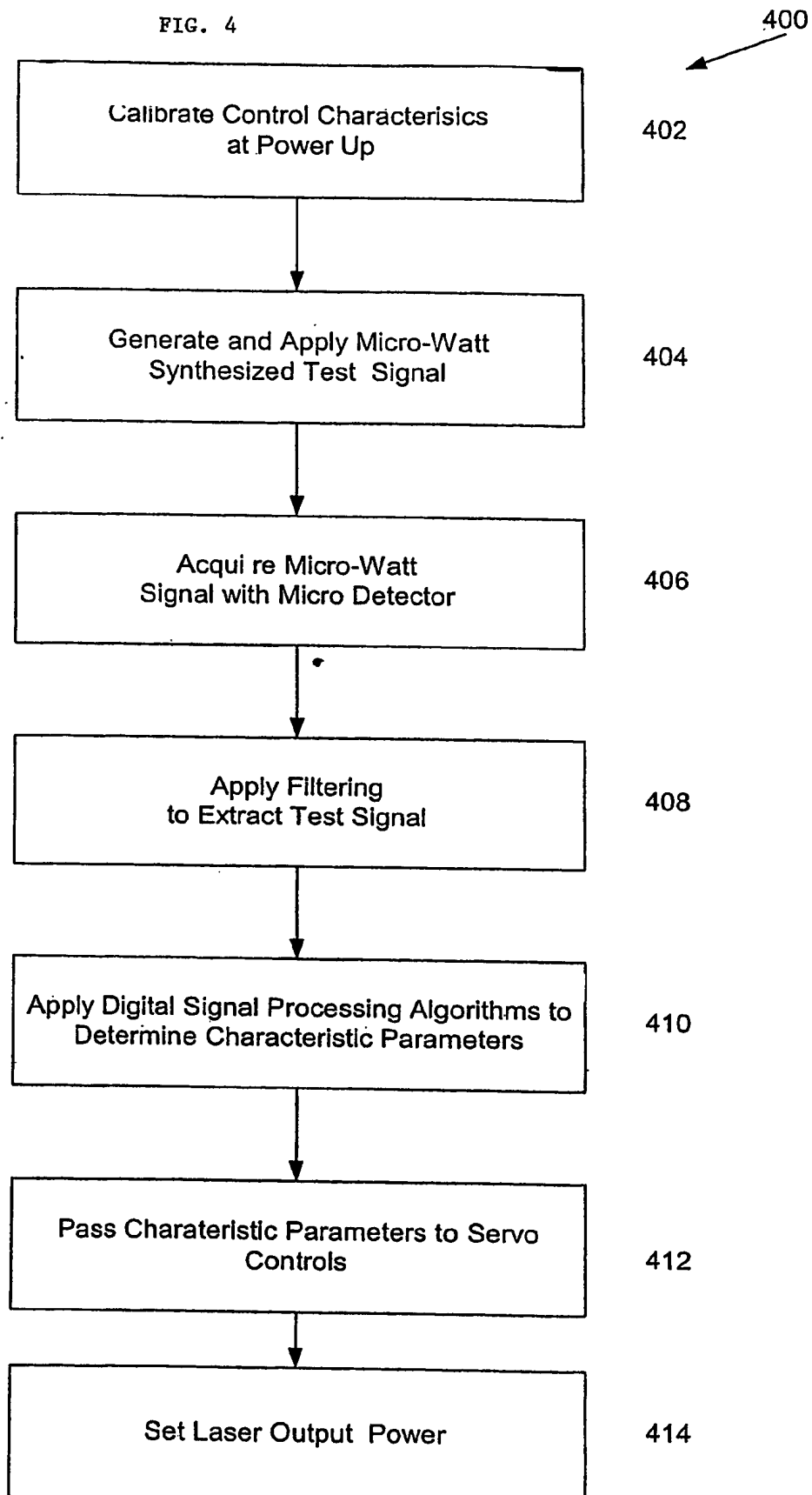
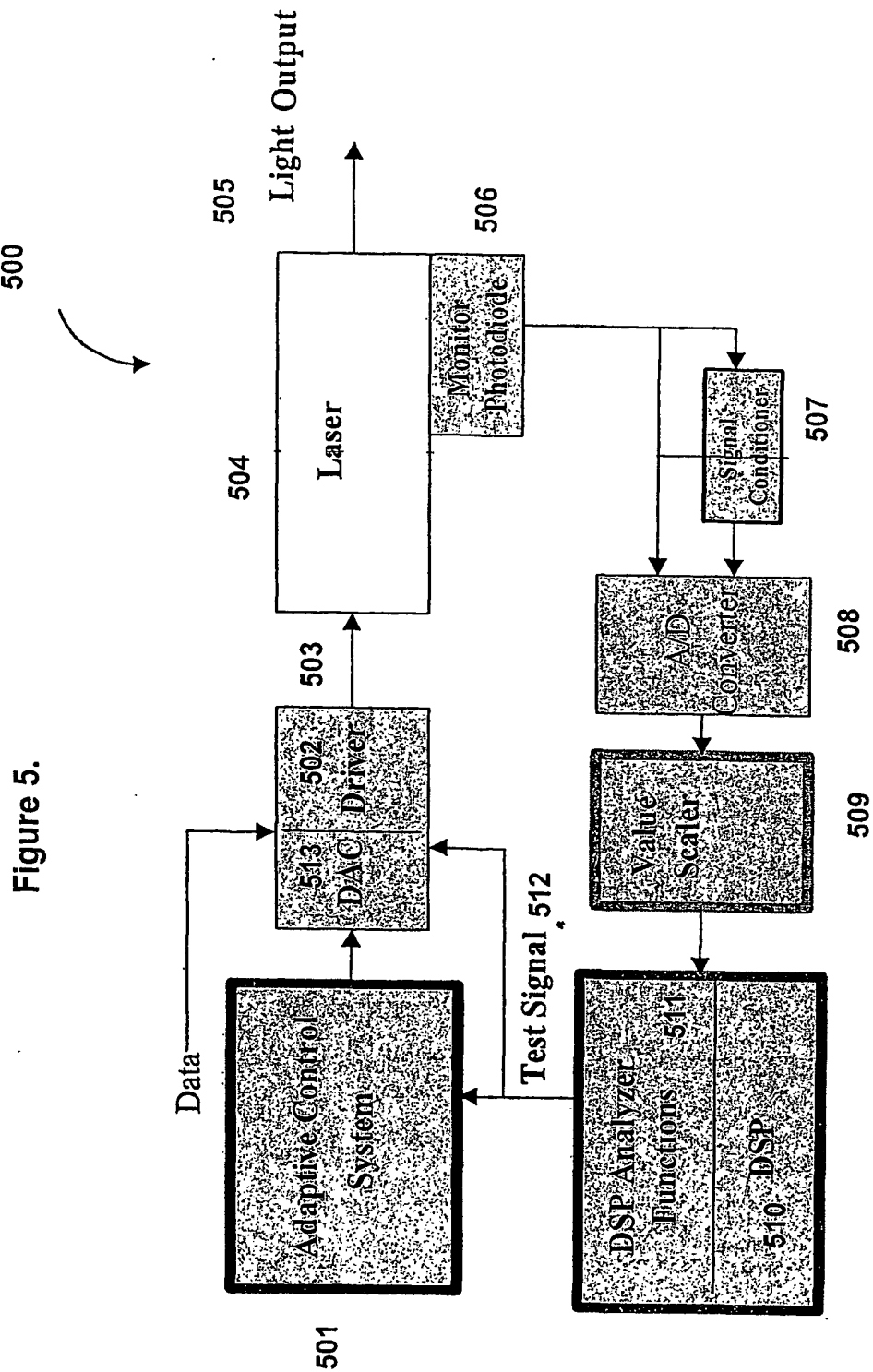


FIG. 4





Quadrature detector

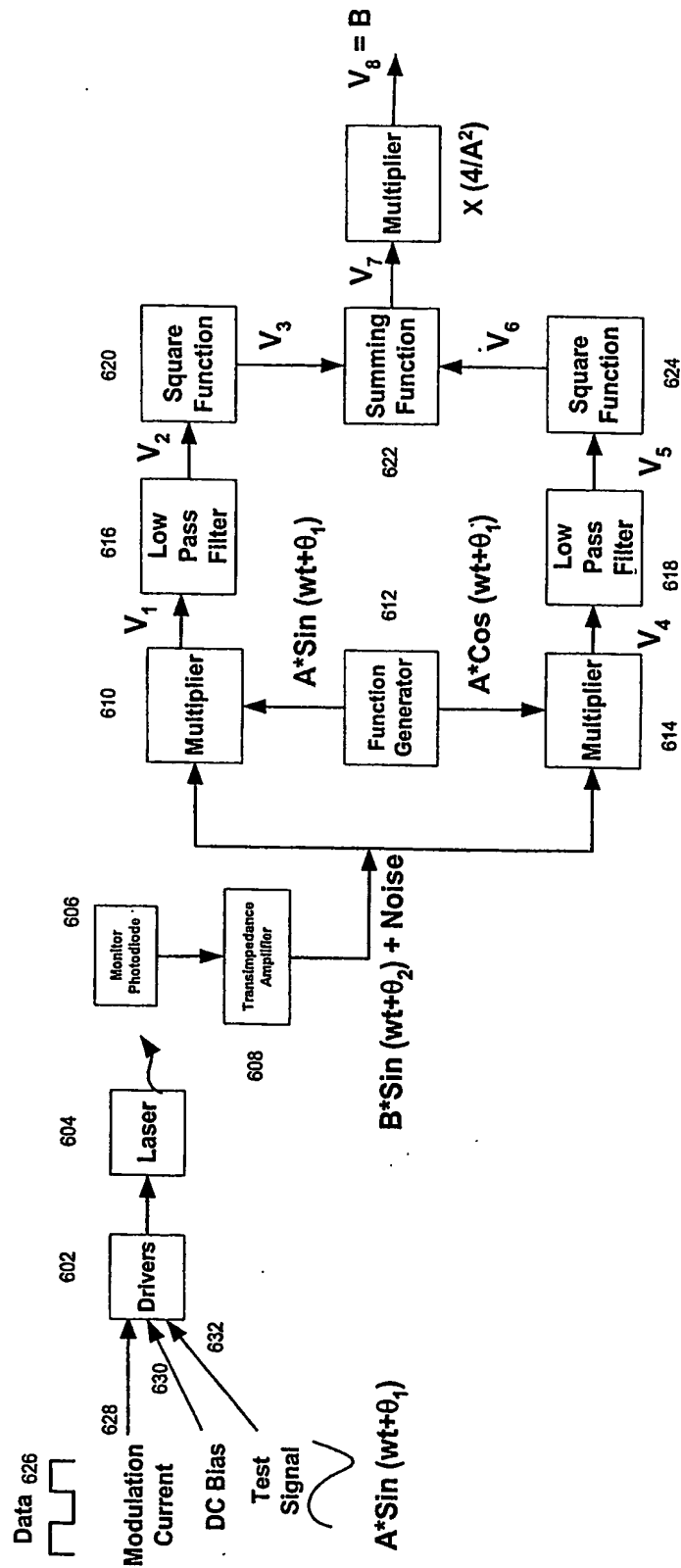


Figure 6

Figure 7

7 00

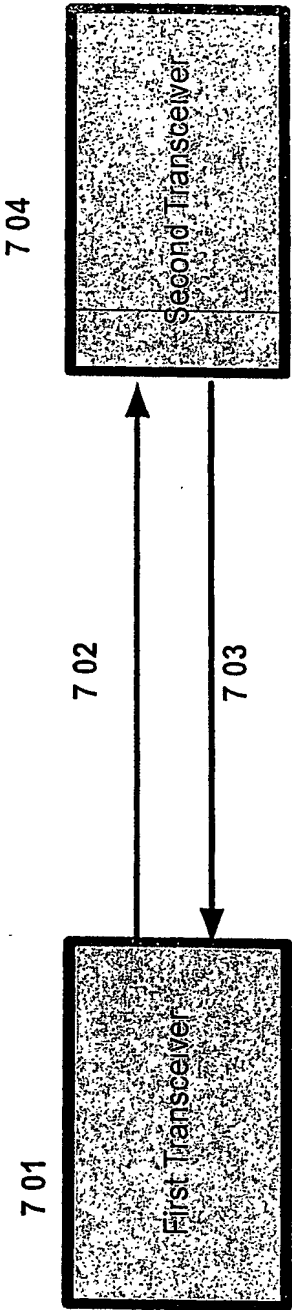


FIG. 8

Signal Processing math

$$V_1 = \{B \cdot \sin(wt + \theta_2) + \text{Noise}\} \cdot \{A \cdot \sin(wt + \theta_1)\}$$

$$V_1 = (AB/2) \{ \cos(\theta_1 - \theta_2) - \cos(2wt + \theta_1 + \theta_2) \} + \text{Noise}$$

$$V_2 = (AB/2) \cdot \{ \cos(\theta_1 - \theta_2) \} = (AB/2) \cdot \{ \cos(\theta_2 - \theta_1) \}$$

$$V_3 = \{(A^2 B^2)/4\} \cdot \{ \cos^2(\theta_2 - \theta_1) \}$$

$$V_4 = \{B \cdot \sin(wt + \theta_2) + \text{Noise}\} \cdot \{A \cdot \cos(wt + \theta_1)\}$$

$$V_4 = (AB/2) \{ \sin(\theta_2 - \theta_1) + \sin(2wt + \theta_2 + \theta_1) \} + \text{Noise}$$

$$V_5 = (AB/2) \cdot \{ \sin(\theta_2 - \theta_1) \}$$

$$V_6 = \{(A^2 B^2)/4\} \cdot \{ \sin^2(\theta_2 - \theta_1) \}$$

$$V_7 = V_3 + V_6 = \{(A^2 B^2)/4\} \cdot \{ \sin^2(\theta_2 - \theta_1) + \cos^2(\theta_2 - \theta_1) \} = (A^2 B^2)/4$$

$$V_8 = \{(A^2 B^2)/4\} \cdot (4/A^2) = B$$

$$\text{Laser Slope} = B/A$$